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Joachim Diederich

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EXAMINER

LERNER, MARTIN

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/530,155	Applicant(s) DIEDERICH ET AL.	
	Examiner MARTIN LERNER	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 to 22 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18 to 20 is/are allowed.
- 6) ☒ Claim(s) 1 to 17 and 21 to 22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/01/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. Figures 1 to 4 are objected to as failing to comply with 37 CFR 1.84(p)(5) because they fail to include reference numerals. It is conventional for drawings to include reference numerals to properly and completely describe an invention, but Applicants have not included any reference numerals either in the drawings or the Specification. It is suggested that reference numerals be added without introducing any new matter.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference numerals in compliance with 37 CFR 1.121(b) are required in reply to the Office Action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, Applicants will be notified and informed of any required corrective action in the next Office Action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because Figures 11 and 12 will be unclear in reproduction. Specifically, Figure 12 is too dark, and is hard to see what is being illustrated. Figure 11 is grainy and unclear.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office Action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, Applicants will be notified and informed of any required corrective action in the next Office Action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

The Specification fails to include reference numerals for illustrating the embodiments of Figures 1 to 4. It is conventional for the Specification to include reference numerals to properly and completely describe an invention, but Applicants have not included any reference numerals in the Specification. It is suggested that reference numerals be added without introducing any new matter.

The Brief Description of the Drawings, at Page 7, Lines 3 to 7, appears to be inconsistent with the Detailed Description of the Drawings, at Page 12, Lines 15 to 18, for Figures 5a to 5b and 6a to 6b. The Brief Description refers to Figure 5a as text from the control subjects, but the Detailed Description says Figure 5b is the text from the control subjects. Similarly, the Brief Description says Figure 6b is the text from the control subjects, but the Detailed Description says Figure 6a is the text from the control subjects.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

The phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Similarly, the term "other body movements" is indefinite because the scope of "other" is unclear.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1 to 2, 4, 7, 9, and 21 to 22 are rejected under 35 U.S.C. 102(e) as being anticipated by *Shaw*.

Regarding independent claim 1, *Shaw* discloses a method of producing indications of dangerous behavior, comprising the steps of:

“capture language cues that are indicative of the psychological or physiological state of a patient” – a computer system 10 is implemented by one or more processors 12 to detect and monitor the occurrence of psychological states in computer generated communications of authors who transmit or receive computer generated communications, such as email, chat, and website content (column 12, line 66 to column 13, line 6: Figure 8); communications from email or online chat represent “language cues”; broadly, an individual whose psychological state is being monitored is “a patient”;

“analyze the language cues to determine key features” – a group of software modules includes a parser module 16 which identifies and tabulates words and word

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phrases present in at least one computer generated communication to or from source 14 to identify categories of information therein (column 13, lines 44 to 51: Figure 8); module 22 executes at least one personal and organizational keyword algorithm which analyzes key words and phrases; expressed in connection to an individual or organizational characteristic, policy, or practice, keywords provide greater evidence that a potentially dangerous emotional state detected in the at least one psychological profiling algorithm may be connected to an individual or an organization (column 17, lines 18 to 25: Figure 8); key words are “key features” of a psychological profiling algorithm;

“produce a data file containing data based upon the key features” – results of the analysis are forwarded to database and statistical module 18, where the aforementioned identified, counted, and recorded words, phrases and message characteristics are stored in the form of a spreadsheet (column 13, lines 51 to 57: Figure 8); a spreadsheet of identified and counted key words is “a data file” produced from the key words for psychological profiling;

“submit the data file to one or more pre-taught machine learning algorithms” – database and statistical module 18 assigns the information to specific database categories of information for analysis by three analytical modules 20, 22, and 24; module 20 includes at least one psychological profiling algorithm which provides an indication of a psychological state of the author (column 13, line 57 to column 14, line 6: Figure 8); modules 20, 22, and 24 further apply their algorithms to the data contained in the database and statistical module 18 to statistically compare the results of the current

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computer generated communication to a fully programmable criteria for each of the categories of information produced by each of the modules (column 14, lines 7 to 30: Figure 8); thus, algorithms of analytical modules 20, 22, and 24 are “pre-taught machine learning algorithms” because the criteria are programmable;

“combine output of the machine learning algorithms to determine the psychological or physiological state of the patient” – modules 20 and 24 include psychological state and message characteristic algorithms to identify a psychological state of the author (column 13, line 60 to column 14, line 6: Figure 8).

Regarding independent claim 21, *Shaw* further discloses “display means adapted to display the psychological or physiological state of the patient” – results of analysis performed are sent to the reporting and warning module 26 and then to the output generator 28, when an output communication is required to be provided to the user or agent thereof (column 14, line 50 to column 15, line 8: Figure 8); computer system 100 produces graphic or tabular ratings of the contents of a work product (column 19, lines 64 to 65).

Regarding independent claim 22, *Shaw* further discloses:

“analyzing the corpus of documents to extract information meeting determined content criteria” – a computer system 10 is implemented by one or more processors 12 to detect and monitor the occurrence of psychological states in computer generated communications of authors who transmit or receive computer generated

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communications, such as email, chat, and website content (column 12, line 66 to column 13, line 6: Figure 8); communications from email or online chat represent “a corpus of documents”;

“returning extracted information that meets a determined psychological state” – results of analysis performed are sent to the reporting and warning module 26 and then to the output generator 28, when an output communication is required to be provided to the user or agent thereof (column 14, line 50 to column 15, line 8: Figure 8); modules 20 and 24 include psychological state and message characteristic algorithms to identify a psychological state of the author (column 13, line 60 to column 14, line 6: Figure 8).

Regarding claims 2 and 4, *Shaw* discloses that a personal and organizational keyword algorithm compares phrases associated with specific acts (column 14, line 64 to column 15, line 4); phrases for psychological profiling are “semantic” elements and “cues” of behavior; a computer system 10 is implemented by one or more processors 12 to detect and monitor the occurrence of psychological states in computer generated communications of authors who transmit or receive computer generated communications, such as email, chat, and website content (column 12, line 66 to column 13, line 6: Figure 8); communications from email or online chat represent “text from a patient”.

Regarding claim 7, *Shaw* discloses counting a number of keywords and phrases, and comparing the number and type of alert phrases to an average or mean

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(column 13, lines 48 to 51; column 14, line 64 to column 15, line 4: Figure 8); counting keywords relative to an average is equivalent to "a frequency of occurrence of words".

Regarding claim 9, *Shaw* discloses that language parser 16 deconstructs the document to identify categories of information, and passes the deconstructed document to an analysis engine 212 to apply a selected rule set and to perform programmed scoring calculations to obtain a numerical score (column 21, lines 14 to 22: Figure 10); deconstructing and scoring the document involves "pre-processing" and "transformations" of data.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Shaw* in view of *Brown et al. (WO '158)*.

Shaw analyzes language cues from emails, chat, and website content to determine a psychological state, but omits utilizing visual cues including facial expression or body movements by capturing images or a video sample for changes in areas of interest over time. However, *Brown et al. (WO '158)* teaches computer diagnosis and screening of psychological and physical disorders, where a series of visual images of a selected body part of a human subject are recorded sequentially over

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a predetermined time period, and comparing image changes to determine whether or not the subject suffers from a mood disorder. (Abstract) It is suggested that an objective is to provide a less subjective assessment system of a psychological and physical state of a patient as an additional clue to a patient's choice of words and mode of speaking. (Page 1) It would have been obvious to one having ordinary skill in the art to utilize visual cues including facial expression and body movements by capturing images or a video sample for changes over time as taught by *Brown et al.* (WO '158) in a method for analysis of computer generated communications of *Shaw* for a purpose of providing a less subjective assessment system of a psychological state.

10. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Shaw* in view of *Bogdashevsky et al.* ('188).

Shaw analyzes text to identify a psychological state, but does not obtain semantic cues from speech that is converted to text or provide normalization and translation to a form required for one or more machine learning algorithms. However, it is well known that speech can be converted to text by automatic speech recognition software. *Bogdashevsky et al.* ('188) teaches speech signal processing for determining psychological or physiological characteristics using a knowledge base. Digitized speech samples are obtained to generate 30 phrases, which are categorized by CPU 104. (Column 4, Line 61 to Column 5, Line 13: Figures 1 and 2) Energy normalization is performed on the speech signals. (Column 7, Lines 35 to 36: Figure 3: 318) Then, CPU 104 sorts vectors into clusters 400 representing psychologically homogeneous

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groups. (Column 7, Lines 51 to 62: Figure 4) Speech parameters of a test subject are compared to the cluster statistics for each psychologically homogenous group in order to determine which groups correlate most highly to the test subject. (Column 10, Lines 43 to 47) Thus, clustering is "translation to a form required for one or more machine learning algorithms." An objective is to determine an effectiveness of treatment for a psychological or physiological disorder. (Column 3, Lines 23 to 27) It would have been obvious to one having ordinary skill in the art to obtain semantic cues from speech that is converted to text and to translate to a form required for machine learning algorithms as taught by *Bogdashevsky et al.* ('188) in a method for analysis of computer generated communications of *Shaw* for a purpose of determining an effectiveness of treatment for a psychological disorder.

11. Claims 11 to 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Shaw* in view of *Brunner et al.*

Concerning claim 11, *Shaw* does not expressly state that the algorithms are selected from a support vector machine or a neural network. However, *Brunner et al.* teaches a method of monitoring behavior informatics, where a model can be a neural net or a support vector machine algorithm. (Column 8, Lines 40 to 42; Column 23, Lines 13 to 30; Column 24, Lines 43 to 44) An objective is to extract behavioral, physiological, and neurological states of test animal and subjects. (Column 3, Lines 35 to 53) It would have been obvious to one having ordinary skill in the art to employ a neural net or support vector machine algorithm as taught by *Brunner et al.* in a method

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for analysis of computer generated communications of *Shaw* for a purpose of extracting behavioral, physiological, or neurological states of test subjects.

Concerning claim 12, *Brunner et al.* teaches evolving classification rules for each class such that they best capture the features and traits of each class. (Column 22, Lines 17 to 23)

Concerning claim 13, *Brunner et al.* teaches that training data is used to evolve classification rules. (Column 22, Lines 19 to 21) Implicitly, “notice” is taken that training data for psychological profiling is obtained from control and test subjects.

Concerning claims 14 and 15, *Shaw* discloses that module 20 provides psychological profiling derived by an algorithm from the work of Weinberg. (Column 16, Line 47 to Column 17, Line 6) Implicitly, the algorithm for psychological profiling derived from the work of Weinberg is “an expert-defined health related category for learning purposes”; additionally, a category is “discrete” in the sense that an absolute threshold limit is applied to analysis of the communications. (Column 14, Line 64 to Column 15, Line 4)

Concerning claim 16, *Shaw* discloses ranking psychological characteristics on a scale of 0 to 10. (Column 20, Lines 24 to 36)

Concerning claim 17, *Brunner et al.* teaches that training data is used to evolve classification rules. (Column 22, Lines 19 to 21) Implicitly, rules evolve in the sense that they may still change over time after initial training.

Allowable Subject Matter

12. Claims 18 to 20 are allowed.

13. The following is a statement of reasons for the indication of allowable subject matter:

Independent claim 18 sets forth the limitations of filtering a collection of expert descriptions of psychological or physiological conditions with a stoplist, and forming an intersection of lists of frequently occurring descriptive terms, which combination is not disclosed or reasonably suggested by the prior art of record. *Shaw* discloses that module 20 provides psychological profiling derived by an algorithm from the work of Weinberg, which may be construed as an expert description of psychological conditions. (Column 16, Line 47 to Column 17, Line 6) However, *Shaw* does not expressly state that the collection of expert descriptions is filtered with a stoplist, or that an intersection of lists of frequently occurring descriptive terms are used for machine learning.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Wnek and Hillman disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARTIN LERNER whose telephone number is

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(571)272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM
Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Martin Lerner/
Primary Examiner
Art Unit 2626
January 7, 2009